

Appl. No. 10/674,669
Docket No. 8598MR
Amdt. dated May 16, 2007
Reply to Office Action mailed on February 16, 2007
Customer No. 27752

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A halogen dioxide generating system, comprising:
 - a) a source of an aqueous feed solution comprising from about 10 ppm to about 1000 ppm a halogen dioxide salt;
 - b) a non-membrane electrolysis cell comprising an anode and a cathode, and having a cell chamber with an inlet for receiving said halogen dioxide salt and an outlet, ~~wherein the inlet is configured to allow the aqueous feed solution to the inlet at about 10 to about 1000 ppm;~~
 - c) a passage comprising the aqueous feed solution adjacent to the anode of said non-membrane electrolysis cell; and
 - d) an electric current supply selected from the group consisting of a battery, batteries, solar power, and mixtures thereof to flow a current through the aqueous feed solution in the passage, ~~wherein the outlet is configured to allow effluent to exit out the outlet at about 0.1 to about 2 ppm.~~
2. (Original) The halogen dioxide generating system of claim 1, wherein the anode and the cathode are confronting and co-extensive, with a chamber gap of 0.5 mm or less.
3. (Original) The halogen dioxide generating system of claim 1, wherein the anode is a metallic porous anode.
4. (Original) The halogen dioxide generating system of claim 1, wherein said system is interfaced with an appliance.
5. (Original) The halogen dioxide generating system of claim 4, wherein said appliance is selected from the group consisting of refrigerators, water chillers, water fountains, soda fountains, oral irrigators, water purifiers, water coolers, washing machines, dishwashing machines, coffee makers, faucets and combinations thereof.

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6. (Original) The halogen dioxide generating system of claim 4, wherein said system is interfaced with said appliance via connection of a water inlet line to the inlet of said electrolysis cell and connection of an outlet line from the outlet of said electrolysis cell to an inlet of said appliance.

7. (Original) The halogen dioxide generating system of claim 4, wherein said system is interfaced with said appliance via connection of said electrolysis cell between an inlet of said appliance and an outlet of a water-dispensing device of said appliance.

8. (Original) The halogen dioxide generating system of claim 4, wherein said system is interfaced with said appliance via connection of said electrolysis cell between an inlet of said appliance and an outlet of an ice-dispensing device of said appliance.

9. (Currently amended) A halogen dioxide salt generating and re-circulating system, comprising:

- a) a source of an aqueous feed solution comprising a halogen dioxide salt;
- b) a non-membrane electrolysis cell comprising an anode and a cathode, said anode and said cathode being separated by a non-conducting porous flow barrier, and having a cell chamber with an inlet for receiving said halogen dioxide salt and an outlet;
- c) passage with an inlet and outlet for the chamber formed through at least a portion of said non-conducting porous flow barrier;
- d) an electric current supply selected from the group consisting of a battery, batteries, solar power, and mixtures wherein said electric current supply converts a portion of the halogen dioxide salt in the passage to halogen dioxide, and thereby forms an aqueous effluent comprising halogen dioxide; and
- e) a return passage for returning depleted effluent comprising the reverted halogen dioxide salt back to said source, wherein the inlet is configured to allow aqueous feed solution to enter the inlet at about 10 to about 1000 ppm, and wherein outlet is configured to allow effluent to exit out the outlet at about 0.1 to about 2 ppm.

10. (Original) The halogen dioxide generating system of claim 9, wherein said system is interfaced with an appliance.

11. (Original) The halogen dioxide generating system of claim 10, wherein said appliance is selected from the group consisting of refrigerators, water chillers, water

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fountains, soda fountains, oral irrigators, water purifiers, water coolers, washing machines, dishwashing machines, coffee makers, faucets and combinations thereof.

12. (Original) The halogen dioxide generating system of claim 10, wherein said system is interfaced with said appliance via connection of a water inlet line to the inlet of said electrolysis cell and connection of an outlet line from the outlet of said electrolysis cell to an inlet of said appliance.

13. (Original) The halogen dioxide generating system of claim 10, wherein said system is interfaced with said appliance via connection of said electrolysis cell between an inlet of said appliance and an outlet of a water-dispensing device of said appliance.

14. (Original) The halogen dioxide generating system of claim 10, wherein said system is interfaced with said appliance via connection of said electrolysis cell between an inlet of said appliance and an outlet of an ice-dispensing device of said appliance.

15. (Currently amended) An electrolysis device comprising:

at least one cell chamber with an inlet for receiving said halogen dioxide salt and an outlet, ~~wherein said inlet is configured to allow influent to enter the inlet at about 10 to about 1000 ppm, and wherein said outlet is configured to allow effluent to exit out the outlet at about 0.1 to about 2 ppm;~~

at least one electrolytic cell with at least one anode and at least one cathode, wherein at least one pair of an anode and a cathode is separated by a porous barrier;

a reservoir connected to said at least one electrolytic cell by a passage;

at least one pump connected to said reservoir and passage; and

at least one electric current supply selected from the group consisting of a battery, batteries, solar power, and mixtures thereof ~~power source~~ connected to said at least one anode and said at least one cathode.